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Towards fewer handicapped children

Ensuring that the whole population of Britain can enjoy the benefits of present medical knowledge is a political, administrative, and educational problem, and as such was really beyond the remit of the conference "Medical research into the prevention of crippling in children" sponsored by Action Research and Birthright and held last week at the Royal College of Obstetricians and Gynaecologists. Nevertheless, many of the speakers expressed their frustration that the results of their research are being made available so slowly throughout the country. Several thought that the incidence of severe handicap could be halved by applying what is already known. The conference was convinced that at very least facilities for resuscitation should be available in every hospital where babies are born.

The conference, which concerned itself mostly with severe mental retardation, cerebral palsy, and congenital anomalies, was attended by geneticists, obstetricians, paediatricians, epidemiologists, and basic research workers, including molecular biologists, and many speakers thought that this interdisciplinary discussion in itself was an important advance. One of the first problems identified was that no reliable figures are available of the incidence of severe handicap in Britain. The conference suggested that a register of birth defects should be started as soon as possible in all regions—computers could make this easy. The Scottish Home and Health Department plans to start such a register next year, but the DHSS is lagging behind. Birth defect registers already exist in Sweden and New South Wales and allow evaluation of new treatments as well as giving an idea of service needs. Registers would encourage the careful epidemiological research needed to identify teratogens and investigate inter-regional variations.

Geneticists are working hard to develop non-invasive techniques of diagnosis—particularly for Down's syndrome. They also want to be able to diagnose earlier—at present when the diagnosis of Down's syndrome is made half the mothers are more than 20 weeks' pregnant. Non-invasive techniques and earlier diagnosis should make possible the prenatal diagnosis of a higher proportion of cases. The technique of recombinant DNA mapping may allow prenatal diagnosis of many more conditions.

The obstetricians reported on the possibilities of prevention based on ultrasonography and fetoscopy. Many more conditions, including some forms of congenital heart disease, can now be diagnosed prenatally, when the right kind of resuscitation measures can be provided for delivery. Even so, the necessary skills are available in only a few centres. Fetoscopy, which allows fetal blood and skin to be sampled, opens up many possibilities, but the 7% fetal loss and the 8% incidence of preterm labour reported with present techniques have discouraged their use except for the diagnosis of the most serious disorders.

Epidemiologists suggest that paediatricians have a lesser part to play in reducing severe handicap, which mostly results from prenatal problems, but a considerable role in reducing milder handicap. Most of the principles of modern intensive neonatal care have been developed from work in animals and more of this is needed—obstetricians and geneticists were agreed on that. Particular problems are those of managing recurrent apnoea in the severely preterm infant; and finding reliable ways of measuring blood pressure, intracerebral blood flow, and intracranial pressure in preterm infants. These technical problems are being solved, but the conference heard less about the relation between severe handicap and social class. Severe handicap, particularly spastic diplegia, is known to be more common in lower socioeconomic groups, but we need more detailed information. Speakers believed that in the absence of large social change researchers might best employ themselves identifying which particular components of socioeconomic deprivation result in an increased incidence of handicap. A current Office of Health Economics briefing[1] shows that the British perinatal mortality is higher than the Swedish rate partly because twice as many babies (7%) born in Britain are below 2500 g, and this is mostly a function of class. A low-birth-weight baby has just as good a chance of survival in Britain as in Sweden. This perhaps confirms that the main ways forward in reducing the incidence of handicap are preventive, epidemiological, and prenatal measures.

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Solanine poisoning

Potatoes are such a common feature of the Western diet that most people are surprised to learn that they are the produce of a poisonous plant. In fact potato stems and leaves contain a series of alkaloidal glycosides, termed solanines, which are highly toxic. The normal tuber contains only small amounts of solanines in the peel and none in the flesh. Poisoning due to feeding the leaves and stems to domestic animals is well recognised, and one instance of poisoning in man was traced to the use of leaves and young shoots as a boiled green vegetable.[1] The main hazard, however, comes from eating "greened" potatoes.

Greening and sprouting occur when potato tubers are exposed to light or are stored in adverse conditions, and these processes are associated with the production of the alkaloids. Initially this occurs at the sites of increased metabolic activity, such as the "eyes"; but eventually solanines can be detected in the flesh of the tuber, and the normal, high concentration-gradient between the peel and the flesh is lost. Fortunately, few people cook greened or sprouted potatoes because of their appearance and their bitter, unpleasant taste;

so that in practice solanine poisoning appears to be rare except in times of food shortage. A few outbreaks, however, have been due to catering errors or unusual conditions.[2]

Such an error caused an outbreak of poisoning that affected 78 schoolboys in South London, recently reported in carefully documented detail by McMillan and Thompson.[3] The onset of symptoms occurred some four to 14 hours after the boys had eaten boiled potatoes. Vomiting and diarrhoea were predominant symptoms, preceded or accompanied by abdominal pain. Fever was not invariable and was often only slight, tending to subside early in the illness. Depression of the central nervous system occurred in the more serious cases, and several patients were comatose with episodes of convulsive twitching. These boys also showed signs of peripheral circulatory collapse, even when dehydration was only slight. Little blood was lost in the stools or vomitus, even though symptoms continued for up to six days. Death has occurred in previous outbreaks, usually within 24 hours[4 5]; but those cases were mainly in undernourished patients who may not have received adequate treatment. In the recent London episode all patients recovered fully, though some were confused and hallucinated for several days.

The treatment for solanine poisoning is replacement of fluid and electrolyte losses; anticonvulsants (diazepam or paraldehyde) may also be needed. Avoiding inappropriate treatment (for example, for supposed bacterial enteritis or acute appendicitis) is, however, no less important; this means speedy diagnosis based on the history and symptoms, backed by negative laboratory tests for infection. The diagnosis can then be confirmed by examining the remaining potatoes or potato waste. Possibly unrecognised mild solanine poisoning may be the cause of many mild episodes of "gastro-enteritis." Perhaps greater awareness of this possibility will lead to further reports.

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Regular Review

Surgery in outpatients

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A surgeon who worked at the Royal Glasgow Hospital for Sick Children any time after the turn of the century might, if he could now read the many publications on day care, be surprised at how much attention it receives. For there and in other large institutions north and south of the border not only minor surgery but also herniotomies, cleft lip repairs, and operations for spina bifida were customarily performed on outpatients.[1]

"Office" or "clinic" surgery for minor conditions has long been a feature of European and North American practice, and more recently has been used to a varying degree in Britain.[2] Nevertheless, the acceptance of day surgery for relatively major operations such as inguino-femoral hernias requiring any type of repair, definitive procedures in the groin for varicose veins, and excision of breast lumps has been a more recent development. Farquharson in Edinburgh[3] is generally held to be one of the pioneers (though in fact he was interested in early ambulation as much as early discharge), followed by a group in Aberdeen.[4] Since then more systematic exploration and evaluation of day surgery have been undertaken by surgeons at the Western General Hospital, Edinburgh,[5 6] by Devlin and his colleagues in Stockton-on-Tees,[7] and by Calnan and Martin at Hammersmith Hospital.[8] Day units with a wider scope than general and plastic surgery have also been described,[9] and both paediatric[10] and gynaecological[11] surgery are also handled in some centres on a day-care basis. Indeed, there now exists a continuous range of function within special organisations and units, which range from five-day wards dispensing relatively conventional but organised care,[12] through short-stay and day-care surgery, to the programmed investigation unit, whose role is diagnostic and organisational rather than therapeutic.[13]

The diversity of approach found in different hospitals reflects varying needs and different constraints. No solution should be regarded as all embracing, and, indeed, the growth of day care in Britain has been ad hoc with individual units largely tailored to local need.

This review is concerned primarily with the concept of day surgery, in which the traditional hotel and nursing support functions of the hospital are either abandoned or transferred elsewhere. Our attitudes towards illness and surgery are very much a product of cultural inheritance and contemporary experience, so that both those giving and those receiving care accept certain norms that tend to change only slowly. Surgeons in Britain have usually reserved hospital inpatient care, followed by a period of gradual convalescence, for patients requiring general anaesthesia and a cut on the trunk or near to it (such as a groin ligation for varicose veins). Change in this norm has come only slowly from both patients and their surgeons. Despite the enthusiasm of the pioneers and the demonstrated feasibility of their methods, the national average hospital stay in 1976 in England and Wales for patients with hernia was 7·8 days and for varicose veins 10·7 days.[14] The apparent conservatism indicated by these figures presumably relates not only to surgical reluctance to change but also to cultural concepts of feeling ill when in fact one is suffering only from a technical hitch. True, between 1964 and 1974 there was a considerable improvement—in the 1960s the hernia